

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2004/031828

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04L1/06 H04L27/34 H04L5/04 H04L1/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KANNAN RAMCHANDRAN: "MULTIRESOLUTION BROADCAST FOR DIGITAL HDTV USING JOINT SOURCE/ CHANNEL CODING" IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, IEEE INC. NEW YORK, US, vol. 11, no. 1, January 1993 (1993-01), pages 6-22, XP000377993 ISSN: 0733-8716	1-33, 35, 37-42
Y	page 6, right-hand column, paragraph 2 page 10, right-hand column, paragraph 2 - paragraph 3 ----- -/--	34, 36



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
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- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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\*G\* document member of the same patent family

Date of the actual completion of the international search

16 February 2005

Date of mailing of the international search report

24/02/2005

Name and mailing address of the ISA

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	E. G. LARSSON, P. STOICA: "Space-Time Block Coding for Wireless Communications pp. 1-4, 5, 6, 8, 9, 87, 88, 97-100" May 2003 (2003-05), CAMBRIDGE UNIVERSITY PRESS, CAMBRIDGE, UK, XP002316665 ISBN: 0 521 82456 7 the whole document	1-42
A	COVER T M: "BROADCAT CHANNELS" IEEE TRANSACTIONS ON INFORMATION THEORY, IEEE INC. NEW YORK, US, vol. IT-18, no. 1, January 1972 (1972-01), pages 2-14, XP000939271 ISSN: 0018-9448 page 2, right-hand column, paragraph 1 Section VII	1-42
A	HEATH R W ET AL INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS: "Multiuser diversity for MIMO wireless systems with linear receivers" CONFERENCE RECORD OF THE 35TH. ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS, & COMPUTERS. PACIFIC GROOVE, CA, NOV. 4 - 7, 2001, ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS AND COMPUTERS, NEW YORK, NY : IEEE, US, vol. VOL. 1 OF 2. CONF. 35, 4 November 2001 (2001-11-04), pages 1194-1199, XP010582229 ISBN: 0-7803-7147-X page 1195, left-hand column, paragraph 3 page 1195, right-hand column, last paragraph	1-42
Y	AMRAOUI A ET AL: "Coding for the mimo broadcast channel" ISIT 2003, 29 June 2003 (2003-06-29), pages 296-296, XP010657324 page 296, right-hand column, paragraph 1	34,36
A	TEN BRINK S ET AL: "Detection thresholds of iterative MIMO processing" PROCEEDINGS 2002 IEEE INTERNATIONAL SYMPOSIUM ON INFORMATION THEORY. ISIT 02. LAUSANNE, SWITZERLAND, JUNE 30 - JULY 5, 2002, IEEE INTERNATIONAL SYMPOSIUM ON INFORMATION THEORY, NEW YORK, NY : IEEE, US, 30 June 2002 (2002-06-30), pages 22-22, XP010601734 ISBN: 0-7803-7501-7 the whole document	34,36

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>WITZKE M ET AL INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS: "Iterative detection of MIMO signals with linear detectors"</p> <p>CONFERENCE RECORD OF THE 36TH. ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS, &amp; COMPUTERS. PACIFIC GROOVE, CA, NOV. 3 - 6, 2002, ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS AND COMPUTERS, NEW YORK, NY : IEEE, US, vol. VOL. 1 OF 2. CONF. 36, 3 November 2002 (2002-11-03), pages 289-293, XP010638218 ISBN: 0-7803-7576-9 Section 2.3</p>	34, 36
A	<p>WO 02/089371 A (HUGHES ELECTRONICS CORPORATION) 7 November 2002 (2002-11-07) figures 3,4</p>	1-42
A	<p>WO 01/39456 A (THOMSON LICENSING S.A; SETTLE, TIMOTHY, FORREST; KRAUSS, THOMAS, PETER) 31 May 2001 (2001-05-31) figure 1</p>	1-42
P,A	<p>YISHENG XUE ET AL: "Cooperated TDMA unlink based on hierarchically modulated alamouti code"</p> <p>COMMUNICATIONS, 2004 INTERNATIONAL ZURICH SEMINAR ON ZURICH, SWITZERLAND FEB.18-20, 2004, PISCATAWAY, NJ, USA, IEEE, 18 February 2004 (2004-02-18), pages 200-203, XP010697704 ISBN: 0-7803-8329-X page 201, left-hand column, paragraphs 4,5</p>	1-42

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PCT/US2004/031828

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